Mr. Rick Beck
Energetic Solutions, Inc.
6200 East Highway 62 - Bldg. 3019
Jeffersonville, Indiana 47130

Re: Registered Construction and Operation Status,
019-11378-00080

Dear Mr. Beck:

The application from Energetic Solutions, Inc. received on September 22, 1999, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following equipment located at 6200 East Highway 62 - Bldg. 3019, Jeffersonville, Indiana 47130, are classified as registered:

(a) Eight (8) fixed cone roof vertical storage tanks; T-1, T-2, T-5, T-6, T-7, T-8, T-9, and T-10, containing explosives emulsions, each tank has a storage capacity of 12,240 gallons, diameter of 10 feet, height of 25 feet.

(b) Five (5) storage bins; T-3, T-22, T-23, T-24, and T-25, containing Ammonium Nitrate prills, each has a storage capacity of 60 tons, square bin 12 feet x 25 feet tall.

(c) Three (3) horizontal storage tanks; T-4, T-19, and T-20 containing #2 fuel oil. T-4 has a storage capacity of 12,000 gallons, diameter of 8 feet, length of 32 feet. T-19 has a storage capacity of 6,000 gallons, diameter of 6 feet, length of 13 feet; T-20 has a storage capacity of 275 gallons, diameter of 3 feet, length of 5 feet.

(d) One (1) storage tank; T-11, containing Ammonium Nitrate/Sodium Nitrate Solutions, with a storage capacity of 12,000 gallons, diameter of 11.3 feet, height of 16.3 feet.

(e) Three (3) storage tanks; T-12, T-15, and T-17, containing Ammonium Nitrate Solutions. T-12 has a storage capacity of 12,000 gallons, diameter of 11.3 feet, height of 16.3 feet; T-15 and T-17 individually has a storage capacity of 23, 500 gallons, diameter of 18.25 feet, height of 12.5 feet.

(f) Four (4) storage tanks; T-13, T-14, T-16, and T-18, containing oil blend. T-13 has a storage capacity of 23, 562 gallons, diameter of 18.25 feet, height of 12.5 feet. T-14 and T-16 individually has a storage capacity of 12,000 gallons, diameter of 10 feet, height of 14.5 feet. T-18 has a storage capacity of 13,800 gallons, diameter of 13.67 feet, height of 13.33 feet.

(g) One (1) propellant pneumatic conveying system, including a baghouse with a redundant bag filter, vented to Stack S-4 with a height of 16 feet, a diameter of 0.03 feet, and a gas flow rate of 413 actual cubic feet per minute (acfm).

(h) One (1) microballoon pneumatic conveying system, including a baghouse, vented to Stack S-5 with a height of 16 feet, a diameter of 0.25 feet and a gas flow rate of 100 acfm.

(i) One (1) aluminum pneumatic conveying system, including a baghouse, vented to Stack S-6 with a height of 16 feet, a diameter of 0.25 feet, and a gas flow rate of 100 acfm.

(j) Three (3) hydraulic tanks HT-1, HT-2, and HT-3, with maximum capacities of 110; 130; and 110 gallons respectively.

(k) One (1) water/glycol tank W/G-1 with a maximum capacity of 400 gallons.

(l) One (1) 5.25 million British Thermal Units per hour (mmBtu/hr) steam boiler, fired by #2 distillate fuel oil, vented to Stack S-1, with a height of 22 feet, a diameter of 1.5 feet, and a gas flow rate of 2280 acfm.

(m) One (1) 0.595 mmBtu/hr steam boiler, fired by #2 distillate fuel oil, vented to Stack S-2, with a height of 22 feet, a diameter of 1.08 feet and a gas flow of 230 acfm.

(n) One (1) 100 KVA output emergency generator (EG-1), fired by #2 distillate fuel oil, vented to Stack S-3, with a height of 23 feet, a diameter of 0.33 feet, and a gas flow rate of 820 acfm.

(o) One (1) fixed flat top vertical storage tank; T-21 containing microballoons with a storage capacity of 5,120 cubic feet, diameter of 12 feet, height of 25 feet. This tank is controlled by a baghouse with air flow rate of 750 actual cubic feet per minute (acfm).

The following conditions shall be applicable:

D.1.1 New Source Performance Standards [326 IAC 12] and [40 CFR § 60.110b, Subpart Kb - Standards of Performance for Volatile Organic Liquid (VOL) Storage Vessels]

(a) VOL tanks T-1, T-2, T-4, T-5, T-6, T-7, T-8, T-9, T-10, T-11, T-12, T-16, and T-18 are subject to § 60.116b “Monitoring of Operation” of this NSPS, which requires the owner or operator of these storage vessels to keep readily accessible records showing their dimensions and an analysis showing their capacity for the life of the source.

(b) VOL tanks T-13, vapor pressure of 0.0193 psi; T-15, vapor pressure of 0.002 psi; and T-17, vapor pressure of 0.002 psi are subject to the “Monitoring of Operation” requirements of § 60.116b(b) and (d). This rule requires the following:

(1) the owner or operator of these storage vessels to keep readily accessible records showing their dimensions and an analysis showing their capacity for the life of the source.

(2) The owner or operator of these storage vessels storing liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the

Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values

(Note: 1 psi = 6.8945 kPa).

D.1.2 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Process Operations), the PM emissions from the following process operations shall be limited as follows:

Process/Facility	PM Emissions Limit (pounds/hour)
Propellant Handling	11.2
Microballoon/Microspheres Handling	5.0
Aluminum Granules Handling	6.45
Ammonium Nitrate Prills Handling	33.0

The pounds per hour PM limitation shall be determined using the following equation:

$$E = 4.10\ P^{0.67}$$

where: E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.3 Baghouse Inspections

An inspection shall be performed each calender quarter of all bags controlling the raw materials handling operation when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.

D.1.4 Opacity Limitations [326 IAC 5-1-2]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

This registration supersedes Registration CP019-4964-00080, issued on March 22, 1996. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Management that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Management (OAM) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

APD

cc: File -Clark County
Clark County Health Department
Air Compliance - Joe Foyst
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Registration
Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	**Energetic Solutions, Inc.**
Address:	**6200 East Highway 62 - Bldg. 3019**
City:	**Jeffersonville**
Authorized individual: Rick Beck	
Phone #:	**(812) 256-5983**
Registration #:	**019-11378-00080**

I hereby certify that **Energetic Solutions, Inc**. is still in operation and is in compliance with the requirements of **Registration 019-11378-00080**.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	Energetic Solutions, Inc.
Source Location:	6200 East Highway 62, Jeffersonville, Indiana 47130
County:	Clark
SIC Code:	2892
Operation Permit No.:	019-11378-00080
Permit Reviewer:	Aida De Guzman

The Office of Air Management (OAM) has reviewed an application from Energetic Solutions, Inc. relating to the request of an increase in the production rate from the permitted rate of 40,000 pounds per hour of bulk and packaged emulsion explosives to 90,000 pounds per hour bulk emulsion explosives and 45,000 pounds per hour packaged emulsion explosives. Energetic Solutions, Inc. is an **existing registered** source.

Permitted Emission Units and Pollution Control Equipment

(a) Eight (8) fixed cone roof vertical storage tanks; T-1, T-2, T-5, T-6, T-7, T-8, T-9, and T-10, containing explosives emulsions, each tank has a storage capacity of 12,240 gallons, diameter of 10 feet, height of 25 feet.

(b) Five (5) storage bins; T-3, T-22, T-23, T-24, and T-25, containing Ammonium Nitrate prills, each has a storage capacity of 60 tons, square bin 12 feet x 25 feet tall.

(c) Three (3) horizontal storage tanks; T-4, T-19, and T-20 containing #2 fuel oil. T-4 has a storage capacity of 12,000 gallons, diameter of 8 feet, length of 32 feet. T-19 has a storage capacity of 6,000 gallons, diameter of 6 feet, length of 13 feet; T-20 has a storage capacity of 275 gallons, diameter of 3 feet, length of 5 feet.

(d) One (1) storage tank; T-11, containing Ammonium Nitrate/Sodium Nitrate Solutions, with a storage capacity of 12,000 gallons, diameter of 11.3 feet, height of 16.3 feet.

(e) Three (3) storage tanks; T-12, T-15, and T-17, containing Ammonium Nitrate Solutions. T-12 has a storage capacity of 12,000 gallons, diameter of 11.3 feet, height of 16.3 feet; T-15 and T-17 individually has a storage capacity of 23, 500 gallons, diameter of 18.25 feet, height of 12.5 feet.

(f) Four (4) storage tanks; T-13, T-14, T-16, and T-18, containing oil blend. T-13 has a storage capacity of 23, 562 gallons, diameter of 18.25 feet, height of 12.5 feet. T-14 and T-16 individually has a storage capacity of 12,000 gallons, diameter of 10 feet, height of 14.5 feet. T-18 has a storage capacity of 13,800 gallons, diameter of 13.67 feet, height of 13.33 feet.

(g) One (1) propellant pneumatic conveying system, including a baghouse with a redundant bag filter, vented to Stack S-4 with a height of 16 feet, a diameter of 0.03 feet, and a gas flow rate of 413 actual cubic feet per minute (acfm).

(h) One (1) microballoon pneumatic conveying system, including a baghouse, vented to Stack S-5 with a height of 16 feet, a diameter of 0.25 feet and a gas flow rate of 100 acfm.

(i) One (1) aluminum pneumatic conveying system, including a baghouse, vented to Stack S-6 with a height of 16 feet, a diameter of 0.25 feet, and a gas flow rate of 100 acfm.

(j) Three (3) hydraulic tanks HT-1, HT-2, and HT-3, with maximum capacities of 110; 130; and 110 gallons respectively.

(k) One (1) water/glycol tank W/G-1 with a maximum capacity of 400 gallons.

(l) One (1) 5.25 million British Thermal Units per hour (mmBtu/hr) steam boiler, fired by #2 distillate fuel oil, vented to Stack S-1, with a height of 22 feet, a diameter of 1.5 feet, and a gas flow rate of 2280 acfm.

(m) One (1) 0.595 mmBtu/hr steam boiler, fired by #2 distillate fuel oil, vented to Stack S-2, with a height of 22 feet, a diameter of 1.08 feet and a gas flow of 230 acfm.

(n) One (1) 100 KVA output emergency generator (EG-1), fired by #2 distillate fuel oil, vented to Stack S-3, with a height of 23 feet, a diameter of 0.33 feet, and a gas flow rate of 820 acfm.

(o) One (1) fixed flat top vertical storage tank; T-21 containing microballoons with a storage capacity of 5,120 cubic feet, diameter of 12 feet, height of 25 feet. This tank is controlled by a baghouse with flow rate of 750 actual cubic feet per minute (acfm).

Existing Approvals

The source has been operating under a previous approval:

(b) Registration CP019-4964-00080, issued on March 22, 1996.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 22, 1999, with additional information received on October 26, and 29, 1999, November 18, 1999, December 30, 1999, and January 14, 2000.

Emission Calculations

(a) Combustion Emissions: See Pages 1 through 3 TSD Appendix A for detailed emission calculations.

(b) Explosives Production Emissions:
A determination was made in the issued Registration CP019-4964-00080 that the baghouses are actually product filter separators and not control units and are part of the process. Raw material is also conveyed pneumatically. Therefore, PM emission is determined after each baghouse.

(1) Conveying Emissions:

CONVEYING EMISSIONS			
Operation ID	Baghouse Outlet Grain Loading (gr/cuft)	Air Flow Rate (acfm)	PM Emissions
Propellant Conveyor	0.10	413.96	1.55
Microballoon Conveyor	0.01	101.22	0.038
Aluminum Conveyor	0.05	35.011	0.065
Microballoon Storage Tank T-21	0.02	750	0.56
Ammonium Nitrate Prill Conveying			1.97
TOTAL			4.18

Methodology:
PM = grain loading, gr/cu ft * air flow rate, acf/min * 60 min/hr * 8760 hr/yr * lb/7000 gr 8 ton/2000 lb

Ammonium nitrate Prill Conveying: (Using Ef 0.02 lb/ton, SCC 3-01-027-09)
PM = 45,000 lb/hr * ton/2000 lb * 0.02 lb/ton * 8760 hr/yr * ton/2000 lb
= 1.97 ton/year

(c) Storage Tanks Emissions: See Tanks Program 4.0 Spreadsheets for Detailed Emission Calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	5.77
PM-10	5.77
SO_2	14.2
VOC	1.54
CO	4.82
NO_x	21.89

HAP’s	Potential To Emit (tons/year)
Dibutylphthalate	0.03
2,4-Dinitrotoluene	0.14
TOTAL	0.017

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of Oxides of Nitrogen (NOx) are less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7, and it remains a **Registered** source.

or

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination HAPs is less than twenty-five (25) tons per year. Therefore, the source is **not** subject to the provisions of 326 IAC 2-7.

Actual Emissions

No previous emission data has been received from the source.

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Storage Tanks	0.0	0.0	0.0	0.05	0.0	0.0	0.17
2 Boilers, and 1 Generator	1.59	1.59	14.2	1.49	4.82	21.89	0.0
Explosives Production Process	4.18	4.18	0.0	0.0	0.0	0.0	0.0
Total Emissions	5.77	5.77	14.2	1.54	4.82	21.89	0.17

County Attainment Status

The source is located in Clark County.

Pollutant	Status (attainment, maintenance attainment, or unclassifiable; severe, moderate, or marginal nonattainment)
PM-10	attainment
SO_2	attainment
Ozone	moderate nonattainment
CO	attainment
Lead	not determined

(a) Volatile organic compounds (VOC) and oxides of nitrogen are precursors for the formation of ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Clark County has been designated as moderate nonattainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) Clark County has been classified as attainment for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for the Prevention of Significant Deterioration (PSD) 326 IAC 2-2.

Source Status

The source is being re-permitted based on the new production throughput and the new 326 IAC 2 (Permitting Rules), approved in December 25, 1998.

Existing Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity:

Pollutant	Emissions (ton/yr)
PM	5.77
PM10	5.77
SO_2	14.2
VOC	1.49
CO	4.82
NO_x	21.89

(a) This existing source is **not** a major stationary source because NOx and VOC, both nonattainment pollutants are not emitted at a rate of 100 tons per year or greater and it is not in one of the 28 listed source categories.

(b) This existing source is **not** a major stationary source because all the other criteria pollutants, which are attainment are not emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)
This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:
(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This approval will supersede the **only** air approval, Registration CP019-4964-00080, issued on March 22, 1996, to the source.

Federal Rule Applicability

(b) New Source Performance Standards (NSPS)

(1) 40 CFR § 60.110b, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which construction, reconstruction, or modification commenced after July 23, 1984.

Storage tanks T-1, T-2, T-4, through T-12, T-16 and T-18 all have capacities greater than 40 cubic meters (10,567 gallons), but less than 75 cubic meters (19,813 gallons) are subject to the “Monitoring of Operation” requirement of Part 60.116b(b). This rule requires the owner or operator of these storage vessels to keep readily accessible records showing their dimensions and an analysis showing their capacity for the life of the source. See enclosed copy of this rule.

Storage tank T-13 has a storage capacity of 23,562 gallons. Storage tanks T-15, and T-17 individually has a storage capacity of 23, 500 gallons. These tanks have a design capacity greater than 19,813 gallons but less than 39,890 gallons, and the VOL stored has a maximum true vapor pressure less than 15

kPa as follows:

T-13, vapor pressure of 0.0193 psi
T-15, vapor pressure of 0.002 psi
T-17, vapor pressure of 0.002 psi (1 psi = 6.8945 kPa)

The above tanks are subject to the "Monitoring of Operation" requirements of Part 60.116b(b) and (d). This rule requires (1) the owner or operator of these storage vessels to keep readily accessible records showing their dimensions and an analysis showing their capacity for the life of the source. (2) The owner or operator of these storage vessels storing liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values.

All other storage tanks do not store volatile organic liquid and their capacities are smaller than 40 cubic meters.

(2) 40 CFR § 60.40c, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Generating Units. This standard applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 million Btu per hour (mmBtu/hr) or less but greater than 10 mmBtu/hr.

The two (2) boilers, one rated at 5.25 mmBtu/hr and the other is rated at 0.595 mmBtu/hr are not subject to this NSPS, because their heat input capacity are less than 10 mmBtu/hr.

(3) There are no other New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) National Emission Standards for Hazardous Air Pollutants (NESHAPs:
There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

(a) 326 IAC 2-6 (Emission Reporting)
This source is located in Clark County and the potential to emit VOC or NO_X is less than ten (10) tons per year. Therefore, rule 326 IAC 2-6 does not apply.

(b) 326 IAC 5-1 (Visible Emissions Limitations)
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

(a) 326 IAC 8-4-3 (Petroleum Liquid Storage Tanks)
This rule applies to all petroleum liquid storage vessels with capacities greater than one hundred fifty thousand (150,000) liters (thirty-nine thousand (39,000) gallons) containing volatile organic compounds whose true vapor pressure is greater than 10.5 kPa (1.52 psi).

Storage Tanks T-4, T-19, and T20 which stores #2 fuel oil are not subject to this rule, because each storage capacity is less than 39,000 gallons.

(b) 326 IAC 8-1-6 (General Reduction Requirements)
The VOL storage tanks are not subject to this rule, because their individual or combined potential VOC emissions are far below 25 tons per year.

(c) 326 IAC 6-3-2 (Process Operations)
This rule mandates a PM emissions limit for the following process operations using the following equation:

$$E = 4.10\ P^{0.67}$$

where: E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

(1) Propellant Handling Operation:

$$E = 4.10\ \left(\frac{9{,}000\ \text{lb/hr}}{2000\ \text{lb/ton}}\right)^{0.67}$$
$$= 11.2\ \text{lb/hr}$$

(2) Microballoon/glass microspheres handling operation:

$$E = 4.10\ \left(\frac{2{,}700\ \text{lb/hr}}{2000\ \text{lb/ton}}\right)^{0.67}$$
$$= 5.0\ \text{lb/hr}$$

(3) Aluminum granules handling operation:

$$E = 4.10\ \left(\frac{3{,}150\ \text{lb/hr}}{2000\ \text{lb/ton}}\right)^{0.67}$$
$$= 6.45\ \text{lb/hr}$$

(4) Ammonium Nitrate prills handling operation:

$$E = 4.10\ \left(\frac{45000\ \text{lb/hr}}{2000\ \text{lb/ton}}\right)^{0.67}$$
$$= 33.0\ \text{lb/hr}$$

Each material handling operation is in compliance with 326 IAC 6-3-2 because each PM emission is well below the limit in this rule.

(e) 326 IAC 7-1.1-1(Sulfur Dioxide Emissions Limitation)
The 100 KVA output #2 fuel oil -fired emergency generator is not subject to 326 IAC 7-1.1, because its SO_2 potential to emit (PTE) is less than 25 tons per year or 10 pounds per hour.

(f) 326 IAC 10-1-1 (Nitrogen Oxides Control in Clark and Floyd Counties)
The 100 KVA output #2 fuel oil -fired emergency generator is not subject to 326 IAC 10-1-1, because its NOx PTE is less than 40 tons per year, and is not located at a source that emits or has the NOx PTE greater than or equal to one hundred (100) tons per year.

(g) 326 IAC 2-4.1-1 (New Source Toxic Control)
The explosive manufacturing plant is not subject to 326 IAC 2-4.1-1, because it is not a new plant and it is not major for single HAP nor for combined HAPs.

Conclusion

The increase in production of this explosive manufacturing plant shall be subject to the conditions of the attached proposed **Registration 019-11378-00080.**

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil

Company Nan **Energetic Solutions, Inc.**
Address, City **6200 East Highway 62, Jeffersonville, Indiana**
CP: **019-11378**
Plt ID: **019-00080**
Reviewer: **Aida De Guzman**
Date: **Nov. 15, 1999**

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
		0.5
5.25	328.5	

	Pollutant				
	PM*	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.0	71 *(142.0S)*	20.0	0.34	5.0
Potential Emission in tons/yr	0.3	11.7	3.3	0.1	0.8

Methodology

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)
*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

above
emission
factors to

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil

Company Nan **Energetic Solutions, Inc.**
Address, City **6200 East Highway 62, Jeffersonville, Indiana 47130**
CP: **019-11378**
Plt ID: **019-00080**
Reviewer: **Aida De Guzman**
Date: **Nov. 15, 1999**

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
		0.5
0.595	37.23	

	Pollutant				
	PM*	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.0	71 *(142.0S)*	20.0	0.34	5.0
Potential Emission in tons/yr	0.0	1.3	0.4	0.0	0.1

Methodology

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)
*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

above
emission
factors to

Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Turbine (>250 and <600 HP)
Reciprocating

Compa Energetic Solutions, Inc.
Addres 6200 E. Highway 62, Jeffersonville, Indiana 47130
CP#: 019-11378
Plt ID: 019-00080
Reviev Aida De Guzman
Date: Nov. 15, 1999

A. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity
MM Btu/hr

0.9

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMBtu	0.31	0.31	0.29	4.41	0.4	0.95
Potential Emission in tons/yr	1.28	1.28	1.19	18.16	1.48	3.91

B. Emissions calculated based on output rating (hp)

Heat Input Capacity
Horsepower (hp)

134.0

Potential Throughput
hp-hr/yr

1173840.0

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	1.29	1.29	1.20	18.19	1.48	3.92

100 KVA = 100 KW
100 KW * 1.34 HP/KW = 134 HP
134 HP * 7000 Btu/HP|-hr = 938,000 Btu/hr * mm/1,000,000 = 0.938 mmBtu/hr

Methodology

Potential Througput (hp-hr/yr) = hp * 8760 hr/yr

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-2
Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)
Emission (tons/yr) = [Potential Throughput (hp-/hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton)

Information was given regarding which

above
emission